



# RIDER PHANTOM MRI

## Summary

The RIDER Phantom MRI data set contains repeat phantom studies. The phantom used for all data acquisitions was a version of the EuroSpin II Test Object 5 as distributed by Diagnostic Sonar, Ltd (Livingston, West Lothian, Scotland). The phantom was comprised of 18 25-mm doped gel filled tubes and 1 20-mm tube containing 0.25 mM GdDTPA.

Scanners evaluated:

- Scanner A – 1.5T GE 8-channel HD with BRM gradient subsystem (33 mT/m amplitude; 120 T/m-s)
- Scanner B – 1.5T GE 8-channel HD with CRM gradient subsystem (50 mT/m amplitude; 150 T/m-s)
- Scanner C – 1.5T Siemens Espree (VB13) with 33 mT/m amplitude, 100 T/m-s gradient subsystem
- Scanner D – 3.0T GE 8-channel HD with TwinSpeed gradients (40 mT/m; 150 T/m-s in zoom mode) For all measurements, an 8-channel phased array head coil was used.

## About the RIDER project

The Reference Image Database to Evaluate Therapy Response (RIDER) is a targeted data collection used to generate an initial consensus on how to harmonize data collection and analysis for quantitative imaging methods applied to measure the response to drug or radiation therapy. The National Cancer Institute (NCI) has exercised a series of contracts with specific academic sites for collection of repeat "coffee break," longitudinal phantom, and patient data for a range of imaging modalities (currently computed tomography [CT] positron emission tomography [PET] CT, dynamic contrast-enhanced magnetic resonance imaging [DCE MRI], diffusion-weighted [DW] MRI) and organ sites (currently lung, breast, and neuro). The methods for data collection, analysis, and results are described in the new Combined RIDER White Paper Report (Sept 2008):

- [RIDER White Paper: Combined contracts report \( Sept 2008\) PDF](#)






The long term goal is to provide a resource to permit harmonized methods for data collection and analysis across different commercial imaging platforms to support multi-site clinical trials, using imaging as a biomarker for therapy response. Thus, the database should permit an objective comparison of methods for data collection and analysis as a national and international resource as described in the first RIDER white paper report (2006):

- [RIDER White Paper: Executive Summary PDF](#)
- [RIDER White Paper: Editorial in Nature.com](#)

Data Access Detailed Description Citations & Data Usage Policy Versions

## Data Access

Choosing the Download option will provide you with a file to launch the TCIA Download Manager to download the entire collection. If you want to browse or filter the data to select only specific scans/studies please use the [Search By Collection](#) option.

Data Type	Download all or Query/Filter
Images (DICOM, 3.4GB)	 
DICOM Metadata Digest (CSV)	
Data Acquisition Details and Measurement Summary (PDF)	
Data Key (PDF)	

Click the Versions tab for more info about data releases.

### Detailed Description

Collection Statistics	
Modalities	MR
Number of Patients	10
Number of Studies	13
Number of Series	45
Number of Images	7,061
Image Size (GB)	3.4

- [RIDER MR Phantom Data Summary.pdf](#) provides a detailed summary of the image acquisition and data analysis performed in the generation of in this collection.
- [RIDER PhantomMR Key.pdf](#) provides a key for understanding their presentation in NBIA.

## Citations & Data Usage Policy

This collection is freely available to browse, download, and use for commercial, scientific and educational purposes as outlined in the [Creative Commons Attribution 3.0 Unported License](#). See TCIA's [Data Usage Policies and Restrictions](#) for additional details. Questions may be directed to [help@cancerimagingarchive.net](mailto:help@cancerimagingarchive.net).

**Please be sure to include the following citations in your work if you use this data set:**

### Data Citation

Jackson, Edward F. (2015). Data From RIDER\_PHANTOM\_MRI. The Cancer Imaging Archive. <http://doi.org/10.7937/K9/TCIA.2015.MI4QDDHU>

### Publication Citation

Jackson EF, Barboriak DP, Bidaut LM, Meyer CR. Magnetic resonance assessment of response to therapy: tumor change measurement, truth data and error sources. *Translational Oncology* 2(4):211-5, 2009.





### TCIA Citation

Clark K, Vendt B, Smith K, Freymann J, Kirby J, Koppel P, Moore S, Phillips S, Maffitt D, Pringle M, Tarbox L, Prior F. **The Cancer Imaging Archive (TCIA): Maintaining and Operating a Public Information Repository**, *Journal of Digital Imaging*, Volume 26, Number 6, December, 2013, pp 1045-1057. ([paper](#))

## Other Publications Using This Data

TCIA maintains a [list of publications](#) which leverage our data. At this time we are not aware of any additional publications based on this data. If you have a publication you'd like to add please [contact the TCIA Helpdesk](#).

**Version 1 (Current): Updated 11/9/2011**

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